

Claims

1. Method for defining a distribution fan-out in a packet network,
which is formed of nodes and connection sections, for packet traffic
5 having the same egress node, wherein

- network nodes are subdivided into classes, and
- the classes are determined according to the minimum number of hops
between the network nodes and the egress node, network nodes with the
same minimum number of hops belonging to the same class.

10 2. Method according to Claim 1,
characterized in that,

- from each node of a class at least one link is routed to a node of a
class having one fewer hop.

15 3. Method according to Claim 2,
characterized in that,

- from each node of a class a link is routed along each connection
section to a node of the class having one fewer hop.

20 4. Method according to one of the preceding Claims,
characterized in that,

- for at least one node of a class which is connected by a connection
section to a node of the same class, at least one link between the node
25 and a node of the same class is defined.

5. Method according to Claim 4,
characterized in that,

- links are defined on connection sections between nodes of a class,
30 said links being defined

-- according to a maximization of the number of outgoing logical links
for the node(s) of the class having the least number of outgoing links
and

-- according to link freedom in respect of the links between nodes of the class.

6. Method according to Claim 5,

5 characterized in that,

- for nodes of the class, the nodes are sequenced according to the number of outgoing links and, if nodes have the same number of outgoing links, according to the capacity of the incoming links,

10 - for at least some of the nodes, the following steps are performed for each node depending on their sequence:

-- the shortest path from the node to the set of nodes of the class which is fewer by one is identified, paths via outgoing links leading directly to nodes of the class N-1 being disregarded, and

15 -- if an identified path does not lead to a loop within the nodes of the class, the link via the first connection section of the identified path is incorporated into the distribution fan-out as a link.

7. Method according to one of the preceding Claims,
characterized in that,

20 - in the case of a node which is assigned to a class and which has at least two outgoing links, in the event of failure of one of the outgoing links, the traffic to be routed via this link is distributed onto the other outgoing link or links.

25 8. Method according to one of the preceding Claims,
characterized in that,

- in the case of a node which is assigned to a class and which has one outgoing link, in the event of failure of said outgoing link

30 -- the directions of all the links coming into it and originating at nodes of the same class are inverted, and

-- should no links coming into it and originating at nodes of the same class exist, all the links coming into it are inverted.

9. Method according to one of the preceding Claims,

characterized in that,

-in the event of failure of an outgoing link of a node assigned to a class, the class of the node is redefined if the duration of the failure exceeds a limit value.